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IS 8797 (1978): Handloom Cotton Fabric for School Uniforms
[TXD 8: Handloom and Khadi]



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IS : 8797 - 1978

Indian Standard
SPECIFICATION FOR
HANDLOOM COTTON FABRIC FOR
SCHOOL UNIFORMS

UDC 677.21.064 : 371.896



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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Price Rs. 6.00

Gr 3

September 1978

Indian Standard

SPECIFICATION FOR HANDLOOM COTTON FABRIC FOR SCHOOL UNIFORMS

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Indian Standard

SPECIFICATION FOR HANDLOOM COTTON FABRIC FOR SCHOOL UNIFORMS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 5 June 1978, after the draft finalized by the Handloom and Khadi Sectional Committee had been approved by the Textile Division Council.

0.2 The breaking load of the cloth has not been specified since the standard recommends the use of yarn conforming to IS : 171-1973* (*see 2.1*).

0.3 To familiarize the industry with international System of Units (SI Units), the basic SI Units as well as the recommended SI Units for use in the textile industry are given at the end of the standard (*see Appendix B*).

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the constructional particulars and other requirements of 11 varieties of handloom cotton fabric used in the manufacture of school uniforms. The cloth shall be bleached or dyed.

1.2 This standard does not specify the general appearance, feel, finish, etc, of the cloth (*see also 3.3*).

2. MANUFACTURE

2.1 Yarn — The cotton yarn used in the manufacture of the cloth shall be satisfactory in evenness and reasonably free from neps and spinning defects. The yarns shall conform to Grade C of IS : 171-1973*.

*Specification for grey cotton yarn (*second revision*).

†Rules for rounding off numerical values (*revised*).

2.2 Cloth — The cloth shall be free from dressing and filling materials and from substances liable to cause subsequent tendering.

3. REQUIREMENTS

3.1 The constructional particulars of cloth shall conform to those given in Table 1.

3.2 The colour fastness ratings and other requirements of cloth shall conform to those given in Table 2.

3.3 If in order to illustrate or specify the indeterminable characteristics, such as general appearance, lustre, feel and shade of the cloth, a sample has been agreed upon and sealed, the supply shall be in conformity with the sample in such respects.

3.3.1 The custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.

4. INSPECTION

4.1 The cloth, when visually inspected, shall be reasonably free from the following defects:

- a) Weft crack of more than two missing picks across the width of the material;
- b) Prominently noticeable weft bar due to the fineness in raw material, count, twist, lustre, colour, shade, etc;
- c) More than two adjustment ends running parallel, broken or missing and extending beyond 15 cm;
- d) Prominent selvedge defects;
- e) Noticeable warp or weft float in the body;
- f) Noticeable oil or other stains;
- g) Noticeable cut or tear up to 3 mm in size;
- h) Smash rupturing the texture of the fabric;
- j) Prominently noticeable dyeing defects.

4.1.1 A reference may be made to IS : 4125-1967* for details of these defects.

*Glossary of terms pertaining to defects in fabrics.

**TABLE 1 CONSTRUCTIONAL PARTICULARS OF HANDLOOM COTTON FABRIC FOR
SCHOOL UNIFORMS**

(Clause 3.1)

VARI- ETY No.	COUNT OF YARN [COTTON COUNT (UNIVERSAL COUNT)]		ENDS/ cm	PICKS/ cm	LENGTH	WIDTH	WEAVE
	Warp	Weft					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					m	cm	
1	20s (30 tex)	10s (59 tex)	22	18	↑	↑	↑
2	20s (30 tex)	10s (59 tex)	25	18			Plain
3	20s (30 tex)	10s (59 tex)	28	20	20	71, 82,	↓
4	14s (42 tex)	12s (50 tex)	18	17	or	92, 112	↑
5	20s (30 tex)	14s (42 tex)	28	18	as	or as	Cellular
6	30s/2 (20 tex × 2)	10s (59 tex)	18	17	agreed	agreed	↓
7	14s (42 tex)	14s (42 tex)	28	19			↑
8	30s/2 (20 tex × 2)	10s (59 tex)	25	14			3/1 Twill
9	30s/2 (20 tex × 2)	10s (59 tex)	26	16			↑
10	30s/2 (20 tex × 2)	10s (59 tex)	28	17			↓
11	40s/2 (14.5 tex × 2)	14s (42 tex)	30	22	↓	↓	↓
TOLER- ANCE, PERCENT	± 5	± 5	± 5	± 5	—	± 2	—
METHOD OF TEST	IS : 3442-1966*		IS : 1963-1969†		IS : 1954-1969‡		Visual

*Method for determination of crimp and count of yarn removed from fabrics.

†Method for determination of threads per decimetre in woven fabrics (first revision).

‡Method for determination of length and width of fabrics (first revision).

TABLE 2 REQUIREMENTS OF HANDLOOM COTTON FABRIC FOR SCHOOL UNIFORMS

(Clause 3.2)

Sl. No.	CHARACTERISTIC	REQUIREMENTS	METHOD OF TEST, REF TO
(1)	(2)	(3)	(4)
i)	Colour fastness to:		
	a) Light	5 or better	IS : 686-1957* or IS : 2454-1967†
	b) Washing, Test 4	4 or better	IS : 765-1966‡
ii)	Dimensional change, percent, <i>Max</i>	4.0	IS : 2977-1964§
iii)	Scouring loss, percent, <i>Max</i>	2.5	IS : 1383-1977
iv)	pH value of aqueous extract	6.0 to 8.5	Appendix A

*Method for determination of colour fastness of textile materials to daylight.

†Method for determination of colour fastness of textile materials to artificial light (xenon lamp).

‡Method for determination of colour fastness of textile materials to washing: Test 4 (revised).

§Method for determination of dimensional changes of woven fabrics (other than wool) on soaking in water.

||Method for determination of scouring loss in grey and finished cotton textile materials (first revision).

5. MARKING

5.1 The cloth shall be suitably marked or labelled with the following information:

- Name of the material;
- Manufacturer's name, initials or trade-mark;
- Length and width of the piece; and
- Count of warp and weft yarn.

5.1.1 The cloth may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

6. PACKING

6.1 Unless otherwise agreed upon by the buyer and the seller, the cloth shall preferably be packed in bales or cases in conformity with the procedure laid down either in IS : 1347-1972* or IS : 293-1967†.

7. SAMPLING

7.1 Lot — The quantity of handloom cotton fabric for school uniforms of the same type, variety and width and colour delivered to a buyer against a despatch note shall constitute a lot.

7.2 To ascertain the conformity of the lot to the requirements of this standard, samples shall be drawn and inspected from each lot separately.

7.3 The number of pieces to be selected at random for inspection shall be in accordance with Table 3.

TABLE 3 SAMPLE SIZE AND PERMISSIBLE NUMBER OF NON-CONFORMING PIECES

LOT SIZE	SAMPLE SIZE	PERMISSIBLE NUMBER OF NON-CONFORMING PIECES	SUB-SAMPLE SIZE
(1)	(2)	(3)	(4)
Up to 25	3	0	2
26 „ 50	5	0	2
51 „ 150	8	0	3
151 „ 300	13	1	3
301 „ 500	20	1	5
501 and above	32	2	8

7.4 Number of Tests and Criteria for Conformity

<i>Characteristics</i>	<i>Number of Tests</i>	<i>Criteria for Conformity</i>
Visual inspection, ends, picks, length and width	According to col 2 of Table 3	Number of non-conforming pieces to exceed corresponding number given in col 3 of Table 3
Count of yarn, colour fastness to washing, dimensional change, scouring loss, and pH value	According to col 4 of Table 3	All the test specimens meet the corresponding requirements
Colour fastness to light	2 for lot size of 300 or less and 3 otherwise	do

*Code for inland packaging of cotton cloth and yarn (*first revision*).

†Code for seaworthy packaging of cotton cloth and yarn (*second revision*).

APPENDIX A

(Table 2)

METHOD FOR DETERMINATION OF pH VALUE OF AQUEOUS EXTRACT

A-1. APPARATUS

A-1.1 Erlenmeyer Flask

A-1.2 Reflux Condenser

A-2. REAGENTS

A-2.1 Distilled Water — See IS : 1070-1977*.

A-2.2 Indicator pH Papers

A-3. PROCEDURE

A-3.1 Draw from each piece in the test sample at least two test specimens each weighing 5 g.

A-3.2 Rinse the Erlenmeyer flask with distilled water. Take one test specimen and cut it into small bits. Put the bits in the Erlenmeyer flask and add to this 50 ml of distilled water. Boil the contents for one hour under the reflux condenser. Stopper the flask and cool the contents. Decant the supernatant extract in a test tube.

A-3.3 Take the pH indicator paper. Dip it in the extract and compare the colour of the moistened indicator paper with those printed on the booklet or dispenser containing the indicator paper. Designate the number, written on a particular colour shade with which the moistened indicator paper matches, as pH of the extract.

A-3.4 Similarly test the remaining test specimen(s).

A-4. REPORT

A-4.1 Report the pH value of the extract as determined above.

*Specification for water for general laboratory use (second revision).

APPENDIX B(*Clause 0.3*)**SI UNITS****TABLE 4 INTERNATIONAL SYSTEM OF UNITS****Base Units**

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	CONVERSION
Force	newton	N	1 N = 0.101 972 kgf
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Pressure, stress	pascal	Pa	1 Pa = N/m ²

TABLE 5 RECOMMENDED SI UNITS FOR TEXTILES

Sl. No.	CHARACTERISTIC	SI UNITS		APPLICATION
		Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)
1.	Length	Millimetre	mm	Fibre
		Millimetre, centimetre	mm, cm	Samples and test specimens (as appropriate)
		Metre	m	Yarns, ropes and cordages, fabrics
2.	Width	Millimetre	mm	Narrow fabrics
		Centimetre	cm	Other fabrics
		Millimetre, centimetre	mm, cm	Samples and test specimen (as appropriate)
		Centimetre, metre	cm, m	Carpets, druggets, <i>DURRIES</i> (as appropriate)
3.	Thickness	Micrometre (micron)	μ m	Delicate fabrics
		Millimetre	mm	Other fabrics, carpets, felts
4.	Linear density	Tex	tex	Yarns
		Millitex	mtex	Fibres
		Decitex	dtex	Filament and filament yarns
		Kilotex	ktex	Slivers, ropes and cordages
5.	Diameter	Micrometre (micron)	μ m	Fibres
		Millimetre	mm	Yarns, ropes, cordages
6.	Circumference	Millimetre	mm	Ropes, cordages
7.	Threads in cloth:			Woven fabrics (as appropriate)
	a) Length	Number per centimetre	ends/cm	
		Number per decimetre	ends/dm	
	b) Width	Number per centimetre	picks/cm	
		Number per decimetre	picks/dm	
8.	Warp threads in loom	Number per centimetre	ends/cm	Reeds
9.	Stitches in knitted cloth:			Knitted fabrics (as appropriate)
	a) Length	Courses per centimetre	courses/cm	
		Courses per decimetre	courses/dm	
	b) Width	Wales per centimetre	wales/cm	
		Wales per decimetre	wales/dm	

(Continued)

TABLE 5 RECOMMENDED SI UNITS FOR TEXTILES — *Contd*

Sl. No.	CHARACTERISTIC	SI UNITS		APPLICATION
		Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)
10.	Stitch length	Millimetre	mm	Knitted fabrics Made-up fabrics
11.	Mass per unit area	Grams per square metre	g/m ²	Fabrics
12.	Mass per unit length	Grams per metre	g/m	Fabrics
13.	Twist	Turns per centimetre	turns/cm	Yarns, ropes (as appropriate)
		Turns per metre	turns/m	
14.	Test or gauge length	Millimetre, centimetre	mm, cm	Fibres, yarns and fabric specimens (as appropriate)
15.	Breaking load	Millinewton	mN	Fibres, delicate yarns (skeins or individual)
		Newton	N	Strong yarns (individual or skeins), ropes and cordages, fabrics
16.	Breaking length	Kilometre	km	Yarns
17.	Tenacity	Millinewton per tex	mN/tex	Fibres, yarns (individual or skeins)
18.	Twist factor or twist multiplier	Turns per centimetre × square root of tex	turns/cm × $\sqrt{\text{tex}}$	Yarns (as appropriate)
		Turns per metre × square root of tex	turns/m × $\sqrt{\text{tex}}$	
19.	Bursting strength	Newton per square centimetre	N/cm ²	Fabrics
20.	Tear strength	Millinewton	mN	Fabrics (as appropriate)
		Newton	N	
21.	Pile height	Millimetre	mm	Carpets
22.	Pile density	Mass of pile yarn in grams per square metre per millimetre pile height	g/m ² /mm pile height	Pile carpet
23.	Elastic modulus	Millinewton per tex per unit deformation	mN/tex/ unit deformation	Fibres, yarns, strands

INDIAN STANDARDS
ON
HANDLOOM COTTON FABRICS

IS:

- 745-1975 Handloom cotton bed sheets, grey (*first revision*)
- 749-1978 Handloom cotton dungri cloth (*first revision*)
- 750-1976 Handloom cotton lungies (*first revision*)
- 752-1955 Handloom cotton muslin, bleached
- 753-1955 Handloom cotton pugri cloth, bleached or dyed
- 755-1955 Handloom cotton malmal, bleached
- 756-1955 Handloom cotton dosuti, grey, scoured, bleached or dyed
- 757-1971 Handloom cotton lint, absorbent, bleached (*first revision*)
- 758-1975 Handloom cotton gauze, absorbent (*second revision*)
- 854-1956 Handloom cotton turkish towels, bleached, striped, checked or dyed
- 855-1956 Handloom cotton honeycomb towels, bleached, striped, checked or dyed
- 856-1971 Handloom cotton huckaback towels (*first revision*)
- 857-1956 Handloom cotton napkins, bleached, striped, checked or dyed
- 858-1969 Handloom cotton table cloth, bleached, striped, checked or dyed
- 859-1978 Handloom cotton dusters (*first revision*)
- 862-1956 Handloom cotton ticking cloth, grey, striped
- 863-1969 Handloom cotton bandage cloth (*first revision*)
- 864-1956 Handloom cotton light sheeting, grey
- 1094-1976 Handloom cotton gada cloth (*first revision*)
- 1095-1957 Handloom cotton dress materials, bleached, dyed, printed, striped or checked
- 1097-1957 Handloom cotton mosquito netting, bleached or dyed
- 1098-1957 Handloom cotton cambric, bleached
- 1099-1957 Handloom cotton lining cloth, dyed
- 1100-1978 Handloom cotton crepe (*first revision*)
- 1101-1957 Handloom cotton cellular shirting, bleached or dyed
- 1102-1968 Handloom buckram cloth (*first revision*)
- 1240-1958 Handloom cotton nainsook, bleached or dyed
- 1241-1958 Handloom cotton calico, bleached or dyed
- 1242-1975 Handloom cotton shirting (*first revision*)
- 1243-1958 Handloom cotton coating, bleached, dyed, striped or checked
- 1244-1958 Handloom cotton longcloth, bleached or dyed
- 1245-1958 Handloom cotton pyjama cloth, grey, with stripes
- 1246-1978 Handloom cotton curtain cloth (*first revision*)
- 1451-1959 Handloom cotton drills, bleached or dyed
- 1556-1960 Handloom cotton poplin, bleached or dyed
- 1579-1960 Handloom cotton twills, bleached or dyed
- 1939-1975 Handloom cotton handkerchiefs (*first revision*)
- 6906-1973 Requirements for colour fastness of handloom cotton textiles